

Disciplinary Literacy Brief

What IS Disciplinary Literacy?

Disciplinary Literacy is defined by Shanahan and Shanahan (2008) as advanced literacy instruction embedded within content-areas. Disciplinary Literacy instruction engages learners with content in ways that mirror what scientists and mathematicians do to inquire and gain understanding in their disciplines



Rational, Audience & Partners

The most cognitively demanding task a student can be given is independent reading. So, it should come as no surprise that “reading to learn” requires more of both the content teachers and students than “learning to read.” Snow (2010, p. 450) asserts that middle and high school students “are less able to convert their word-reading skills into comprehension when confronted with texts in science (or math or social studies) than they are when confronted with texts of fiction or discursive essays.” This is due in part to the fact that academic language by design is concise, precise, and authoritative. Clearly, these demands serve as evidence for instruction that goes beyond merely assigning reading of a chapter in science or writing a theorem in mathematics. They command content area teachers to consider how the processes of reading, writing, and discourse should be used effectively to help students sort out and make sense of the academic language of mathematics and science.

S²MART Centers SC will identify schools that show a performance mismatch between English/Language Arts (ELA) and Mathematics and/or Science performance on the Palmetto Assessment of State Standards (PASS) or in the End-of-Course (EOC) tests in Algebra and/or Biology. We define a mismatch as a measurably higher level of performance in ELA than in Mathematics or Science. In these selected schools, we will apply what we know about using disciplinary literacy processes to accelerate student achievement in mathematics and science.

S²MART Centers SC will focus our instructional improvement efforts on the abilities to read purposefully, engage in productive dialog and write in meaningful ways are essential to make sense of the complexities of mathematics and science (Beauchamp & McCallum, 2010). We call these abilities “*Communication as Inquiry*.”

In addition, S²MART Centers SC will seek out content instructors from among the 36 Institutes of Higher Education in South Carolina with teacher education programs. The selected content instructors will offer support and refinement as teacher use research-based instructional strategies (Kamil, 2010) aimed at developing students’ “*Communication as Inquiry*” abilities.

We are proud to recognize Lockheed Martin as a Founding Partner in support of or Disciplinary Literacy research.

Using Disciplinary Literacy to Accelerate Student Achievement in Mathematics and Science



South Carolina Department of Education
S²MART Centers SC
Support Services for Making a Real Transformation

The eight Regional S²MART Centers, in partnership with South Carolina's Coalition for Mathematics and Science (SCCMS), have embarked on an exciting action research study aimed at helping schools to fulfill their goal of accelerating student achievement in mathematics and science. Regional S²MART Centers will work directly with professional learning teams in intermediate, middle, and high schools to investigate how "Communication as Inquiry" might increase student achievement. Specifically, S²MART Centers SC will examine how teachers and students effectively use the communication processes of reading, writing, and discourse to make meaning and promote content learning in mathematics and science.

Regional S²MART Centers will support teachers as they utilize a professional teaching and learning cycle to identify and implement research based strategies to engage students in purposeful reading, meaningful writing, and productive dialogue in the classroom.

Teacher self reports, classroom observations, and collected artifacts of instruction along with results from the Palmetto Assessment of State Standards test or the End-of-Course tests in Algebra and Biology will be used to assess and measure the impact of Disciplinary Literacy instruction.

Resources to consider:

Beauchamp, A. & McCallum, R. (2010, July). Planning Instruction That Will Result In Increased Proficiency In Science: A Framework for Understanding the Role That Academic Language, Critical Thinking and Language Play in Science Classrooms. Session presented at summer leadership institute of the National Science Educators Leadership Association, Flagstaff, AZ.

Carnegie Corporation of New York. (2010). *Time to Act: Final Report from Carnegie Corporation of New York's Council on Advancing Adolescent Literacy.* New York: Carnegie Corporation of New York.

Kamil, M. (2010, June 22). Improving Adolescent Literacy: Effective Classroom and Interventions Practices. Practice guide from SERVE seminar presented at S2MART Center Community Meeting, Columbia, SC.

Shanahan, T. & Shanahan C. (2008). Teaching Disciplinary Literacy to Adolescents: Rethinking Content-area Literacy. *Harvard Educational Review*, 78, 1, 40-59.

Snow, C. E. (2010). Academic Language and the Challenge of Learning about Science. *Science*, 328 (23 April 2010).



SOUTH CAROLINA'S COALITION FOR MATHEMATICS & SCIENCE

SCCMS

- ACHIEVEMENT BY DESIGN -

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